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August 1, 2006

Sussex County Planning & Zoning  
Administration Building  
2 The Circle  
Georgetown, DE 19947

Attn: Mr. Lawrence Lank  
Director of Planning

Re: Enclave at Carillon Square  
PLUS Response Letter, PLUS# 2006-04-09  
DBF# 1231A034

Dear Mr. Lank:

This letter is in response to comments received from the office of State Planning Coordination dated, May 25, 2006. The developer would like to thank the Office of State Planning Coordination for the executive summary which helped highlight some of the site specific comments made by various agencies. For your review, we offer the following item-by-item response narrative to the complete list of comments received by the State agencies:

**Office of State Planning Coordination - Contact: Herb Inden 739-3090**

*The proposed project is located primarily within an Investment Level 2 area with a small portion within the Investment Level 3 area according to the Strategies for State Policies and Spending. For Level 2 areas, State policies support development activities. The project is to be commended for the inclusion of recreation and other amenities and connections to area shopping.*

- **The developer acknowledges that the project is located in Investment Levels 2 and 3 according to the Strategies for State Policies and Spending.**

**Division of Historic and Cultural Affairs - Contact: Alice Guerrant 739-5685**

*Nothing is known within this parcel. The W. Lingo House is shown on Beers Atlas of 1868 near the bend close to Indian Mission Rd. This may be the same location as the buildings on the parcel today. There may be archaeological remains in this area associated with the Lingo House. In the 1950s a large chicken house stood in the middle of the parcel behind the*

*have high potential for prehistoric-period archaeological sites. There is an early- to mid-20th-century house (S-9845) nearby, at the corner of Indian Mission Rd. and the John J. Williams Hwy.*

*Small, rural, family cemeteries often are found in relation to historic farm complexes, such as the Lingo House, usually a good distance behind or to the side of the house. The developer should be aware of Delaware's Unmarked Human Remains Act of 1987, which governs the discovery and disposition of such remains. The unexpected discovery of unmarked human remains during construction can result in significant delays while the process is carried out. We will be happy to discuss these issues with the developer; the contact person for this program is Faye Stocum, 302-736-7400.*

*The Division of Historical and Cultural Affairs would appreciate the opportunity to look at the buildings and document any that meet our age criterion prior to any demolition activities. In addition, they would appreciate the opportunity to look for archaeological sites and determine something about their location, nature, and extent prior to any ground-disturbing activities.*

- **The developer would like to thank you for the historic information pertaining to the site. If unmarked human remains are discovered on this site during construction we will contact DHCA. We also thank you for the contact information.**

**Department of Transportation -Contact: Bill Brockenbrough 760-2109**

- 1) *Delaware Route 5 is classified as a collector road. De1DOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 40 feet from the centerline on collector roads. Therefore we will require right-of-way dedication along the frontage to provide any additional width needed from this project.*
  - **The developer has updated the plans to include a labeled 40 foot right-of-way from the centerline of Delaware Route 5. A dedication note has been added, where required, along the frontage to provide any additional width.**
- 2) *The plan for the development should include a 15-foot wide permanent easement across the frontage of the site for a future shared use path.*
  - **A 15-foot wide permanent easement has been added along the frontage of the site for a future shared use path.**
- 3) *De1DOT applauds the proposed connection between subject development and the Carillon Square shopping center but they are concerned about its potential to draw cut-through traffic bypassing congestion at the intersection of Delaware Routes 5 and 24.*

*For that reason, DeIDOT recommends that traffic calming measures be designed into Bourdon Drive and the relevant block of Carillon Crossing.*

- **To prevent potential cut-through traffic, the developer is strategically placing stop signs throughout the site.**
- 4) *On Bourdon Drive, it appears that guest parking spaces are proposed across the street from units 601 through 604. Because this will be one of the highest traffic blocks in the development, it would be better to move those spaces elsewhere.*
  - **The guest parking spaces that were originally proposed on Bourdon Drive have been moved around the corner to Carillon Crossing.**
- 5) *The east intersection of Clapper Drive and Carillon Crossing and the south intersection of Bourdon Drive and Carillon Crossing form a pair of offset tees that are quite close together. It would be safer to either align them to form a four-way intersection or move them farther apart.*
  - **The developer has resolved this issue by forming a four-way intersection between Bourdon Drive and Carillon Crossing. This increases the distance between intersections and also eliminates a tee intersection.**
- 6) *A stub street should be provided from Treble Circle to Tax Parcel 2-34-23.00-111.11, which fronts on Autumn Road, so that if that parcel is ever developed, another access can be provided through it to the subject development.*
  - **A stub street has been provided from Treble Circle to Tax Parcel 2-34-23.00-111.11 to provide access in the case of future development.**
- 7) *The developer's site engineer should contact Mr. John Fiori, our Subdivision Manager for Sussex County, regarding our specific requirements for access. He may be reached at (302) 760-2260.*
  - **The developer thanks you for the contact information.**

**The Department of Natural Resources and Environmental Control -Contact:**  
**Kevin Coyle 739-9071**

### **Soils**

*Based on the Sussex County soil survey Fort Mott-Henlopen complex, Rosedale, Pepperbox, and Longmarsh-Indiantown were mapped on subject parcel. Fort-Mott Henlopen complex and*

*Rosedale are well-drained to somewhat excessively well-drained soil that have moderate limitations on account of rapid permeability. Pepperbox is a moderately well-drained soil of low-lying upland that has moderate limitations for development. Longmarsh-Indiantown complex is a very poorly-drained wetland associated (hydric) soil that has severe limitations for development.*

- **The developer acknowledges that the site is in the vicinity of Fort Mott-Henlopen complex, Rosedale, Pepperbox, and Longmarsh-Indiantown soils. The developer is also aware of the engineering characteristics of these soils and will incorporate this knowledge in the design of the site. The developer will follow all applicable rules and regulations to successfully develop this site in accordance with the Department of Natural Resources and Environmental Control.**

### ***Wetlands***

*Statewide Wetland Mapping Project (SWMP) maps indicate the presence of significant areas of palustrine wetlands on this parcel adjacent to Guinea Creek.*

*These wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. Project plans do not indicate any direct impacts to wetlands, however, cumulative and secondary impacts to wetlands are likely.*

*DNREC recommends a 100-foot vegetated buffer from all streams and wetlands. Site plans indicate that a 10-foot setback will be maintained, leaving a buffer zone from the wetland to lawn of varying widths, most falling well short of the DNREC recommendation. The setback distance is not an adequate protection for this wetland complex. Homeowner infringement and encroachment into the wetland and illegal fill is likely at the given setback distance. The preliminary plan should be redesigned to allow for additional vegetated buffers to the wetland.*

*It should also be noted that this parcel contains a sensitive headwater riparian wetlands associated with Guinea Creek -greatly increasing the probability of harmful impacts to surface and groundwater quality of all waters within the greater Inland Bays watershed, ultimately reducing the probability that the State will achieve the required TMDL nutrient reductions. Headwater streams and their associated wetlands are important for the protection of water quality and the maintenance/integrity of the ecological functions throughout the length of the stream, including the floodplain system downstream. In recognition of this concern, the Watershed Assessment Section strongly recommends the applicant consider preserving the existing forested buffer in its entirety. At least a 100-foot buffer is recommended from all wetlands and water bodies. Efforts to expand the buffer width beyond the recommended buffer width, is strongly encouraged.*

- **The developer acknowledges the importance of preserving wetlands for water quality. Sussex County design standards do not require a buffer on 404 wetlands, however we are providing a 10-foot buffer. No permit will be required for this project.**

### ***Wetland Permitting Information***

*PLUS application materials indicate that wetlands have been delineated (presumably a field delineation). This delineation should be verified by the Army Corps of Engineers through the Jurisdictional Determination process. Please note that impacts to palustrine wetlands are regulated by the Army Corps of Engineers through Section 404 of the Clean Water Act. In situations where the applicant believes that the delineated wetlands on their parcel are nonjurisdictional isolated wetlands, the Corps must be contacted to make the final jurisdictional assessment. They can be reached by phone at 736-9763. A State of Delaware Subaqueous Lands Jurisdictional Determination should also be conducted. In addition, individual 404 permits and certain Nationwide Permits from the Army Corps of Engineers also require 401 Water Quality Certification from the DNREC Wetland and Subaqueous Land Section and Coastal Zone Federal Consistency Certification from the DNREC Division of Soil and Water Conservation, Delaware Coastal Programs Section. Each of these certifications represents a separate permitting process.*

*To find out more about permitting requirements, the applicant is encouraged to attend a Joint Permit Process Meeting. These meetings are held monthly and are attended by federal and state resource agencies responsible for wetland permitting. Contact Denise Rawding at (302) 739-9943 to schedule a meeting.*

- **The developer thanks you for the Corp. of Engineers contact information regarding the permitting and Jurisdictional Determination processes. A request will be submitted to the Army Corp. of Engineers for approval.**

### ***Impervious Cover***

*Based on a review of the submitted PLUS application, the applicant projects that only about 34% of this parcel will be rendered impervious following this parcel's development. However, this figure appears to be a significant underestimate given the scope and density of this project. The applicant should be made aware that all forms of constructed surface imperviousness (i.e., rooftops, sidewalks and roads) should be included in the impervious surface calculation. It is strongly recommended that the applicant recalculate this figure to verify whether their post-development projections realistically reflect the actual amount of created post-development surface imperviousness.*

*Studies link increases in impervious cover to decreases in water quality. Based on analyses of*

*2002 aerial photography by the University of Delaware, the Inland Bays watershed (Indian River), at that time, had about 8.6 percent impervious cover. Although this data is about 4 years old and likely an underestimate, it underscores the importance of a proactive strategy to mitigate for predictable and likely cumulative environmental impacts. Since the amount of imperviousness generated by this project is likely to be significantly higher than the desirable watershed threshold of 10 percent, the applicant is strongly advised to pursue best management practices (BMPs) that mitigate or reduce some of the most likely adverse impacts. Reducing the amount of surface imperviousness through the use of pervious paving materials ("pervious pavers") in lieu of asphalt or concrete in conjunction with an increase in forest cover preservation or additional tree plantings are examples of practical BMPs that could easily be implemented to reduce surface imperviousness.*

- **The percentage of impervious cover has been recalculated and the plans have been updated to include the latest calculation of 41%. This updated calculation also includes the added street stub that the Department of Transportation requested we add to the site.**

#### ***ERES Waters***

*This project is located adjacent to receiving waters of the Inland Bays designated as waters having Exceptional Recreational or Ecological Significance (ERES). ERES waters are recognized as special assets of the State, and shall be protected and/or restored, to the maximum extent practicable, to their natural condition. Provisions in Section 5.6 of Delaware's "Surface Water Quality Standards" (as amended July 11, 2004), specify that all designated ERES waters and receiving tributaries develop a "pollution control strategy" to reduce non-point sources of pollutants through implementation of Best Management Practices (BMPs). Best Management Practices as defined in subsection 5.6.3.5 of this section, expressly authorizes the Department to provide standards for controlling the addition of pollutants and reducing them to the greatest degree achievable and, where practicable, implementation of a standard requiring no discharge of pollutants.*

- **The developer acknowledges the importance of using best management practices in the design of this site and will do so accordingly to prevent further declining the water and habitat quality of the Inland Bays watershed.**

#### ***TMDLs***

*Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Inland Bays Watershed. A TMDL is the maximum level of pollution allowed for a given pollutant below which a "water quality limited water body" can assimilate and still meet water quality standards to the extent necessary to support use goals such as,*

*swimming, fishing, drinking water and shell fish harvesting. Although TMDLs are required by federal law, states are charged with developing and implementing standards to support these desired use goals. This project is located in the low nutrient reduction area requiring 40 percent reductions in nitrogen and phosphorus.*

- **The developer acknowledges the requirement of reducing nutrient runoff and thanks you for the contact information.**

### ***TMDL Compliance through the PCS***

*The proposed pollution control strategy will require the completion of a nutrient budget to estimate nutrient load changes following development; documentation of these load changes will be assessed through a nutrient budget protocol. The nutrient budget protocol is a computer-based model that quantifies post-development nutrient loading under a variety of land use scenarios in combination with a variety (or absence) of BMP types and intensities. The post-development loading rate is then compared with the predevelopment loading rate to assess whether the project meets the prescribed TMDL nutrient load reductions. Based on a preliminary evaluation of this project using said model (with the applicant's assumptions as reported in the PLUS application), the development as currently conceived **does not** meet the Inland Bays watershed TMDL nutrient reduction requirements for nitrogen and phosphorus –the applicant is strongly advised to consider the use of appropriate BMPs and Best Available Technologies (BATs) to ensure compliance. Examples of BMPs or BATs that should be used to significantly reduce nutrient loading from this project, include practices that mitigate or minimize all created forms of surface imperviousness, maintenance/restoration of recommended wetland buffer widths, reductions in the overall amount of forest cover removal, and use of innovative “green-technology” stormwater methodologies rather than conventional open-water stormwater management structures. As mentioned previously, since impervious cover is a very important factor or variable for assessing the environmental impacts from development, the applicant should make sure that the projected surface imperviousness has been assessed in a comprehensive manner. All forms of created surface imperviousness (i.e., rooftops, sidewalks, and roads) should be assessed (excluding wetlands). Failure to do so will not reflect this project's true environmental impacts. We also suggest that the applicant verify their project's compliance with the specified TMDL loading rates by either contacting us or running the model themselves. Please contact Lyle Jones of Watershed Section at 739-9939 for the acceptable model protocol.*

- **The developer acknowledges the importance of using best management practices for the reduction of nutrients and as part of the engineering design of this site, we will comply with all applicable regulations.**

### ***Water Supply***

*The project information sheets state water will be provided to the project by Tidewater Utilities*

*via a central water system. DNREC records indicate that the project is located within the public water service area granted to Public Water Supply (a.k.a. Tidewater Utilities) under Certificate of Public Convenience and Necessity 87-WR-04.*

*Should dewatering points be needed during any phase of construction, a dewatering well construction permit must be obtained from the Water Supply Section prior to construction of the well points. In addition, a water allocation permit will be needed if the pumping rate will exceed 50,000 gallons per day at any time during operation.*

*All well permit applications must be prepared and signed by licensed water well contractors, and only licensed well drillers may construct the wells. Please factor in the necessary time for processing the well permit applications into the construction schedule. Dewatering well permit applications typically take approximately four weeks to process, which allows the necessary time for technical review and advertising.*

*Potential Contamination Sources do exist in the area, and any well permit applications will undergo a detailed review that may increase turnaround time and may require site specific conditions/recommendations. In this case, there is a Large On-Site septic system called Nanticoke Crossing Shop Center, and an Underground Storage Tank for Kohlers located within 1000 feet of the project.*

*Should you have any questions concerning these comments, please contact Rick Rios at 302-739-9944.*

- **The developer concurs with the comment that water will be provided by Tidewater Utilities.**
- **The developer acknowledges that a dewatering well construction permit must be obtained should dewatering be needed on the site. The developer also acknowledges that a water allocation permit may be required should the site exceed the above mentioned pumping rate.**
- **The developer acknowledges that all well permit applications must be prepared and signed by licensed water well contractor and only licensed well drillers may construct the wells. The developer also acknowledges the recommendation to schedule these events accordingly.**

#### ***Sediment and Erosion Control/Stormwater Management***

*A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. The plan review and approval as well as construction inspection will be coordinated through the Sussex Conservation District. Contact Jessica Watson, Program Manager, at (302) 856-7219 for details regarding submittal requirements and fees.*



*It is strongly recommended that you contact the Sussex Conservation District to schedule a pre-application meeting to discuss the sediment and erosion control and stormwater management components of the plan. The site topography, soils mapping, pre- and post-development runoff, and proposed method(s) and location(s) of stormwater management should be brought to the meeting for discussion.*

*A Notice of Intent (NOI) for Stormwater Discharges Associated with Construction Activity must be submitted to the Division of Soil and Water Conservation along with the \$195 NOT fee prior to plan approval.*

- **The developer acknowledges the requirements and fees due to the stormwater portion of the project and will comply accordingly.**

*Applying practices to mimic the pre-development hydrology on the site, promote recharge, maximize the use of existing natural features on the site, and limit the reliance on structural stormwater components, such as maintaining open spaces, should be considered in the overall design of the project as a stormwater management technique.*

*Each stormwater management facility should have an adequate outlet for release of stormwater. Any drainage conveyed onto this site from neighboring properties must be adequately conveyed through the site to the discharge point without interruption.*

*Clearly address how Stormwater Quality and Quantity Treatment will be provided. If this project is eligible for a Quantity Waiver, please make the request in the stormwater narrative citing the specific regulation.*

*Please indicate on the sediment and stormwater management plan who shall be responsible for maintenance of the stormwater management facilities both during construction and after. During the design of the sediment control and stormwater management plan, considerations should be made for maintenance (i.e. access, easements, etc.) of any structures or facilities.*

- **The above mentioned note will be included on the record plan.**

*If a stormwater management pond is going to be utilized as a sediment trap/basin during construction, it must be designed to accommodate 3600 cubic feet of storage per acre of contributing drainage area until project stabilization is complete.*

- *All ponds are required to be constructed per Pond Code 378.*
- *Please note that if the stormwater facilities will impact wetlands, a permit must be provided to the District prior to receiving approval. Please address.*

- *A Certified Construction Reviewer (CCR) is required for any project that is 50 acres or greater.*
  - *DNREC regulations require no more than 20 acres to be disturbed at one time. A phased erosion and sediment control plan and sequence of construction will be required.*
  - *Under the DNREC Health and Safety Memo of 2000, all wet ponds are required to have an open space depth of 3 feet or more that comprises 50-75 percent of the area of the pond.*
  - *Consideration should be made for any adjacent properties during the design of the project, including drainage and erosion/sediment control.*
  - *If any waivers and variances are sought for the project in question, these items should be addressed at the preliminary meeting. Any requests for waivers and variances should be included in the stormwater report narrative.*
- 
- **The developer will follow all applicable rules pertaining to the Delaware Sediment and Stormwater Regulations in the design and execution of this project.**
  - **The developer acknowledges the importance of proper drainage and will consider it in the development of the grading plan. We acknowledge that Sussex Conservation District reserves the right to enter and modify any erosion or sediment control. A pre-application meeting will be scheduled when the engineering design begins on this project.**

### ***Drainage***

*This site is not within a tax ditch watershed. The Drainage Program has not received any recent drainage concerns regarding this site.*

*The Drainage Section requests that all existing ditches on the property be checked for function and cleaned if needed prior to the construction of homes. Wetland permits may be required before cleaning ditches.*

*The Drainage Section requests that all precautions be taken to ensure the project does not hinder any off site drainage upstream of the project or create any off site drainage problems downstream by the release of on site storm water.*

*The Drainage Section strongly recommends that any drainage conveyance between two parcels within a subdivision be dedicated as a drainage easement and such easement be designated as*

*passive open space, not owned by individual landowners. The easement should be of sufficient width to allow for future drainage maintenance as described below:*

- Along an open ditch or swale, the Drainage Section recommends a maintenance equipment zone of 25 feet measured from the top of bank on the maintenance side, and a 10-foot setback zone measured from top of bank on the non-maintenance side. These zones should be maintained as buffers to aid in the reduction of sediment and nutrients entering into the drainage conveyance. Grasses, forbs and sedges planted within these zones should be native species, selected for their height, ease of maintenance, erosion control, and nutrient uptake capabilities. Trees and shrubs planted within the maintenance zone should be native species spaced to allow for drainage maintenance at maturity. Trees should not be planted within 5 feet of the top of ditch to avoid future blockages from roots.*
- Along a stormwater pipe, the Drainage Section recommends a maintenance equipment zone of 15 feet on each side of the pipe as measured from the pipe centerline. This zone should be maintained as buffers to aid in the reduction of sediment and nutrients entering into the drainage conveyance. Grasses, forbs and sedges planted within these zones should be native species selected for their height, ease of maintenance, erosion control, and nutrient uptake capabilities. Trees and shrubs planted within the maintenance zone should be spaced to allow for drainage maintenance at maturity.*

*The Drainage Section recommends that any drainage/utility easement owned by an individual landowner should not have structures, decks, buildings, sheds, kennels, fences or trees within the drainage easement to allow for future drainage maintenance.*

- We acknowledge the above mentioned comments and offer the following:  
We will take all necessary precautions to avoid any upstream or downstream problems. We acknowledge the importance of maintenance on the catch basins and ditches and will consider all restrictions to be recorded on the deed. We also understand your concern of accessibility to the stormwater pipes and will consider your recommendation.**

### ***Open Space***

*To maximize the existing buffering capacity and wildlife habitat on site, it is recommended that the townhouses be removed from the forest edge; instead, designate areas of community open space along the forested areas. Doing so will preserve and expand the existing buffers on site and its value for birds and wildlife and it will create recreational opportunities for residents.*

*In areas set aside for passive open space, the developer is encouraged to consider establishment of additional forested areas or meadow-type grasses. Once established, these*

*ecosystems provide increased water infiltration into groundwater, decreased run-off into surface water, air quality improvements, and require much less maintenance than traditional turf grass, an important consideration if a homeowners association will take over responsibility for maintenance of community open spaces.*

*Open space containing forest and/or wetlands should be placed into a permanent conservation easement or other permanent protection mechanism. Conservation areas should also be demarked to avoid infringement by homeowners.*

- **We acknowledge the above referenced comment.**

### ***Site Visit Request***

*DNREC has never surveyed this site and in order to provide more informed comments and to make reasonable recommendations, our program ecologist respectfully requests the opportunity to survey the forested and wetland resources which could potentially be impacted by the project. This would also allow the applicant the opportunity to reduce potential impacts to rare species and to ensure that the project is environmentally sensitive. Please contact Robert Coxe at (302) 653-2880 to set up a site visit.*

- **The developer acknowledges the request of DNREC to visit and survey the site.**

### ***Forest Preservation***

*According to the application 12.15 out of 19.11 acres of forest (more than 50%) will be removed by this project and according to State Wetland maps, a large portion of this includes wetlands, which can support an array of plant and animal species. A greater effort should be made to preserve the forest on this property. Consideration should be made to reduce the number of units and associated infrastructure. The remaining units could possibly be clustered more so that less infrastructure is necessary and less trees will have to be cleared. The current 10-foot building setback is inadequate for protecting the integrity of adjacent wetlands. There should be a minimum 100-foot vegetative (forested in this case) buffer between the edge of the wetland and buildings or infrastructure. This buffer should be placed in permanent conservation so that future clearing does not reduce the width, and thus the function of the buffer.*

*Implementing the suggested site plan changes will leave a larger area of forested open space that could be useful to all residents and to wildlife. Current open space is comprised of smaller, disconnected areas placed behind units, on corners and in the middle of units that are not necessarily accessible to all residents and may be underutilized.*

*When forested areas are developed, resident wildlife are forced to disperse into surrounding areas in search of adequate habitat. Often, there is inadequate area to support the species that are displaced and this can lead to human/animal conflicts including interactions on the roadways. In addition, forest fragmentation separates wildlife populations and increases "edge effects" that leave many forest dwelling species vulnerable to predation and allows the infiltration of invasive species. Trees should not be cleared from April 1st to July 31st to minimize impacts to birds and other wildlife that utilize forests for breeding.*

- **We acknowledge the above mentioned comments. Deforestation will be avoided as much as possible.**

### ***Plant Rescue***

*Because there is forest loss and wetland impacts associated with this project, DNREC recommends that the developer/landowner contact the Delaware Native Plant Society to initiate a plant rescue. Selected plants from the site of disturbance will be collected by Society members and transplanted to the Society's nursery. Plants will then be used in restoration projects and/or sold at the Society's annual native plant sale. This can be done at no expense or liability to the developer/landowner. Please contact Lynn Redding at (302) 736-7726 or [lynn\\_redding@ml.com](mailto:lynn_redding@ml.com).*

- **The developer acknowledges the request for plant rescues to be initiated on the site and thanks you for the contact information.**

### ***Nuisance Waterfowl***

*Stormwater management ponds may attract waterfowl like resident Canada geese and mute swans. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. Short manicured lawns around ponds provide an attractive habitat for these species. We recommend native plantings of tall grasses, wildflowers, shrubs, and trees at the edge and within a buffer area (50 feet) around the perimeter. Waterfowl do not feel safe when they can not see the surrounding area for possible predators. These plantings should be completed as soon as possible as it is easier to deter geese when there are only a few than it is to remove them once they become plentiful. The Division of Fish and Wildlife does not provide goose control services, and if problems arise, residents or the home-owners association will have to accept the burden of dealing with these species (e.g., permit applications, costs, securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with proper landscaping, monitoring, and other techniques, geese problems can be minimized.*

- **The developer acknowledges the potential problems that waterfowl may**

**cause and will utilize BMP's in the design of the stormwater management to avoid any unnecessary complications.**

### ***Underground Storage Tanks***

*There is one inactive/active LUST site located near the proposed project:*

*Pep-Up #8, Facility # 5-000160, Project #s S9207201 and S0508079*

*No environmental impact is expected from the above inactive/active LUST site. However, should any underground storage tank or petroleum contaminated soil be discovered during construction, the Tank Management Branch must be notified as soon as possible. It is not anticipated that any construction specifications would need to be changed due to petroleum contamination. However, should any unanticipated contamination be encountered and PVC pipe is being utilized, it will need to be changed to ductile steel with nitrile rubber gaskets in the contaminated areas.*

- **The developer acknowledges the proximity of the underground storage tank on the Pep-Up property and should any contamination be discovered during construction, the Tank Management Branch will be notified as soon as possible.**

### ***Solid Waste***

*Each Delaware household generates approximately 3,600 pounds of solid waste per year. On average, each new house constructed generates an additional 10,000 pounds of construction waste. Due to Delaware's present rate of growth and the impact that growth will have on the state's existing landfill capacity, the applicant is requested to be aware of the impact this project will have on the State's limited landfill resources and, to the extent possible, take steps to minimize the amount of construction waste associated with this development.*

- **The developer acknowledges the above mentioned comment and will minimize as much waste as possible.**

### ***Air Quality***

*Once complete, vehicle emissions associated with this project are estimated to be 8.4 tons (16,883.9 pounds) per year of VOC (volatile organic compounds), 7.0 tons (13,978.7 pounds) per year of NOx (nitrogen oxides), 5.2 tons (10,313.7 pounds) per year of SO2 (sulfur dioxide), 0.5 ton (918.1 pounds) per year of fine particulates and 706.2 tons (1,412,312.7 pounds) per year of CO2 (carbon dioxide).*

*Emissions from area sources associated with this project are estimated to be 3.4 tons (6,810.0 pounds) per year of VOC (volatile organic compounds), 0.4 ton (749.3 pounds) per year of NOx (nitrogen oxides), 0.3 ton (621.8 pounds) per year of SO2 (sulfur dioxide), 0.4 ton (802.4 pounds) per year of fine particulates and 13.8 tons (27,606.3 pounds) per year of CO2 (carbon dioxide).*

*Emissions from electrical power generation associated with this project are estimated to be 1.3 tons (2,699.0 pounds) per year of NOx (nitrogen oxides), 4.7 tons (9,387.8 pounds) per year of SO2 (sulfur dioxide) and 692.4 tons (1,384,706.4 pounds) per year of CO2 (carbon dioxide).*

	VOC	NOx	SO <sub>2</sub>	PM <sub>25</sub>	CO <sub>2</sub>
Mobile	8.4	7.0	5.2	0.5	706.2
Residential	3.4	0.4	0.3	0.4	13.8
Electrical Power		1.3	4.7		692.4
TOTAL	11.8	8.7	10.2	0.9	1412.4

*For this project the electrical usage via electric power plant generation alone totaled to produce an additional 1.3 tons of nitrogen oxides per year and 4.7 tons of sulfur dioxide per year.*

*A significant method to mitigate this impact would be to require the builder to construct Energy Star qualified homes. Every percentage of increased energy efficiency translates into a percent reduction in pollution. Quoting from their webpage, <http://www.energystar.gov/>:*

*"ENERGY STAR qualified homes are independently verified to be at least 30% more energy efficient than homes built to the 1993 national Model Energy Code or 15% more efficient than state energy code, whichever is more rigorous. These savings are based on heating, cooling, and hot water energy use and are typically achieved through a combination of:*

*building envelope upgrades,  
high performance windows,  
controlled air infiltration,  
upgraded heating and air conditioning systems,  
tight duct systems and  
upgraded water-heating equipment."*

*The DNREC Energy office is in the process of training builders in making their structures more energy efficient. The Energy Star Program is excellent way to save on energy costs and reduce air pollution. We highly recommend this project development and other residential proposals increase the energy efficiency of their homes.*

*They also recommend that the home builders offer geothermal and photo voltaic energy*

*options. Applicable vehicles should use retrofitted diesel engines during construction. The development should provide tie-ins to the nearest bike paths, links to mass transit, and fund a lawnmower exchange program for their new occupants.*

- **The developer acknowledges all of the above mentioned recommendations and will design the subdivision using as much energy saving processes as possible in an environmentally sound design.**

**State Fire Marshal's Office -Contact: Duane Fox 856-5298**

*These comments are intended for informational use only and do not constitute any type of approval from the Delaware State Fire Marshal's Office. At the time of formal submittal, the applicant shall provide; completed application, fee, and three sets of plans depicting the following in accordance with the Delaware State Fire Prevention Regulation (DSFPR):*

*The State Fire Marshal's Office has no objection to the re-zoning request. The information provided below shall be considered when plans are being designed.*

**Fire Protection Water Requirements:**

- *Water distribution system capable of delivering at least 1500 gpm for 2-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. (Mercantile)*
- *Water distribution system capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. (Assembly, Apartment, and Townhouses)*
- *Where a water distribution system is proposed for the site, the infrastructure for fire protection water shall be provided, including the size of water mains for fire hydrants and sprinkler systems.*

**Fire Protection Features:**

- *All structures over 10,000 Sq. Ft. aggregate will require automatic sprinkler protection installed.*
- *Buildings greater than 10,000 sq.ft., 3-stories of more or over 35 feet, or classified as High Hazard, are required to meet fire lane marking requirements.*
- *Show Fire Department Connection location (Must be within 300 feet of fire hydrant), and detail as shown in the DSFPR.*
- *Show Fire Lanes and Sign Detail as shown in DSFPR*
- *For townhouse buildings, provide a section / detail and the UL design number of the 2-hour fire rated separation wall on the Site plan.*

**Accessibility**



- *All premises, which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus. This means that the access road to the subdivision from John J Williams Hwy and Indian Mission Rd must be constructed so fire department apparatus may negotiate it.*
- *Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.*
- *Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.*
- *The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.*
- *The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.*

**Gas Piping and System Information:**

- *Provide type of fuel proposed, and show locations of bulk containers on plan.*

**Required Notes:**

- *Provide a note on the final plans submitted for review to read "All fire*
  - *lanes, fire hydrants, and fire department connections shall be marked in*
  - *accordance with the Delaware State Fire Prevention Regulations"*
- *Proposed Use*
- *Alpha or Numerical Labels for each building/unit for sites with multiple buildings/units*
- *Square footage of each structure (Total of all Floors)*
- *National Fire Protection Association (NFPA) Construction Type*
- *National Fire Protection Association (NFPA) Construction Type*
- *Maximum Height of Buildings (including number of stories)*
- *Townhouse 2-hr separation wall details shall be shown on site plans*
- *Note indicating if building is to be sprinklered*
- *Name of Water Provider*
- *Letter from Water Provider approving the system layout*
- *Provide Lock Box Note (as detailed in DSFPR) if Building is to be sprinklered*
- *Provide Road Names, even for County Roads*

*Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: [www.delawarestatefiremarshal.com](http://www.delawarestatefiremarshal.com), technical services link, plan review, applications or brochures.*

- **We acknowledge the above mentioned comments and shall comply with all State Fire regulations.**

**Department of Agriculture .Contact: Milton Melendez 698-4500**

*The Delaware Department of Agriculture has no objections to the development of this property. The Strategies for State Policies and Spending encourages environmentally responsible development within Investment Level 2 and 3 areas.*

*The entire site is located in an area designated as a "good recharge" area. DNREC has mapped all ground-water recharge potential areas. A "good" rating is the second highest rating and designates an area as having important ground-water recharge qualities. Maintaining pervious cover in "Excellent" and "Good" recharge areas is crucial for the overall environmental health of our state and extremely important to efforts which ensure an adequate and safe drinking water supply for future generations. Retention of pervious cover to ensure an adequate future water supply is also important for the future viability of agriculture in the First State. The loss of every acre of land designated as "excellent" and "good" recharge areas adversely impacts the future prospects for agriculture in Delaware*

- **The developer acknowledges the above mentioned comments and will comply with all state and local rules and regulations pertaining to agriculture.**

**Public Service Commission .Contact: Andrea Maucher 739-4247**

*Any expansion of natural gas or installation of a closed propane system must fall within Pipeline Safety guidelines. Contact: Malak Michael at (302) 739-4247.*

- **The developer acknowledges that any expansion of natural gas or installation of a closed propane system must satisfy Pipeline Safety guidelines.**

**Delaware State Housing Authority .Contact Karen Horton 739-4263**

*The proposal is the rezoning of 29.00 acres in Investment Levels 2 & 3 from AR-i to MR for 110 townhomes. This will be located on Route 5 near the intersection of Route 5 and Route 24, adjacent to the Corillon Square Shopping Center in Sussex County. According to the State Strategies Map, the proposal is located in Investment Level 2 and 3 areas.*

*As a general planning practice, DSHA encourages residential development in these areas where residents will have proximity to services, markets, and employment opportunities. The*

*proposal also targets first time homebuyers. For informational purposes, the most recent real estate data collected by DSHA, the median home price in Sussex County is \$237,000. However, families earning 100% of Sussex County's median income only qualify for mortgages of \$171,216, thus creating an affordability gap of \$65,784. The provision of units within reach of families earning at least 100% of Sussex County's median income would help increase housing opportunities for first homebuyers. To facilitate the units targeted for first-time homebuyers, DSHA encourages the developer to apply for Sussex County's Moderately Price Housing Units Program, which provides the following incentives; An expedited review; waivers of some or all County fees associated with the County approval process; density bonuses; and, full utilization of the zoning designated for the parcel.*

*A Request for Proposal (RFP) process has been established to select initial program participants. The developer is encouraged to call William C. Lecates, Director of Sussex County's Community Development and Housing Division at (302)855-7777 to learn more about the RFP application process.*

- **The developer acknowledges the need for affordable housing and thanks you for the contact information.**

**Department of Education -Contact: John Marinucci 739-4658**

*DOE offers the following comments on behalf of the Indian River School District.*

- 1. Using the DOE standard formula, this development will generate an estimated 55 students.*
- 2. DOE records indicate that the Indian River School Districts' elementary schools are at or beyond 100% of current capacity based on September 30, 2005 elementary enrollment.*
- 3. DOE records indicate that the Indian River School Districts' secondary schools are not at or beyond 100% of current capacity based on September 30, 2005 secondary enrollment.*
- 4. This development will create additional elementary student population growth which will further compound the existing shortage of space. The developer is strongly encouraged to contact the Indian River School District Administration to address the issue of elementary school over-crowding that this development will exacerbate.*
- 5. DOE requests developer work with the Indian River School District transportation department to establish developer supplied bus stop shelter ROW and shelter structures, interspersed throughout the development as determined and recommended by the local*

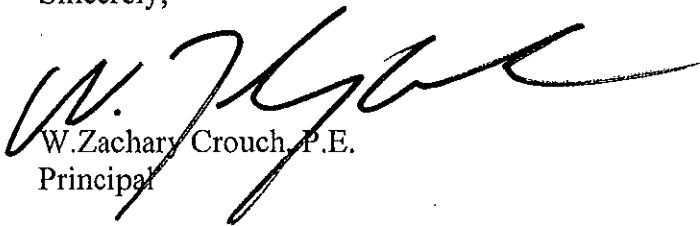
Mr. Lawrence Lank  
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*school district.*

- **The developer acknowledges the increase of students and the effect this project might have on the existing school system and thanks you for the contact information.**

The above comments to each response serve as an official response from Davis, Bowen & Friedel, Inc. On behalf of our client Lacrosse Homes, we thank you for your review and comments on this project. If you should have any questions or concerns please contact me at (302) 424-1441.

Sincerely,



W. Zachary Crouch, P.E.  
Principal

WZC\dmv

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Enc.

Cc: ' Mrs. Constance Holland, AICP, State Office of Planning Coordination, w/ Enc.